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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/329,909	06/10/1999	PHILIPPE LAVAL		8754

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EUGENE C RZUCIDLO
GREENBERG TRAURIG
885 THIRD AVENUE 21ST FLR.
NEW YORK, NY 10022

EXAMINER

HONG, STEPHEN S

ART UNIT	PAPER NUMBER
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2178

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/329,909

Applicant(s)

LAVAL ET AL.

Examiner

Stephen S. Hong

Art Unit

2178

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 8/28, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Part III DETAILED ACTION

1. This action is responsive to communications: request for reconsideration filed on August 28, 2003 to the application, filed on June 10, 1999.
2. Claims 1-23 are pending in the case. Claims 1 and 15 are independent claims. Note that the last claim numbered as "claim 24". However, since there was no claim 23, the last claim was renumbered as claim 23, pursuant to 37 CFR 1.192.
3. The rejection of claims 1-11 and 15-23 under 35 U.S.C. 103(a) as being unpatentable over Gillis, U.S. Pat. No. 6,523,026 B1, Feb. 18, 2003 has been withdrawn pursuant to the Applicant's argument.

Priority

4. Receipt is acknowledged of papers submitted under 35 U.S.C. § 119, which papers have been placed of record in the file.

Drawings

5. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Specification

6. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;

- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

7. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

8. The following guidelines illustrate the preferred layout and content for patent applications. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

The following order or arrangement is preferred in framing the specification and, except for the reference to the drawings, each of the lettered items should appear in upper case, without underling or bold type, as section headings. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) Title of the Invention.
- (b) Cross-Reference to Related Applications.
©Statement Regarding Federally Sponsored Research or Development.
- (d) Reference to a "Sequence Listing," a table, or a computer program listing appendix submitted on compact disc (see 37 CFR 1.52(e)(5)).
- (e) Background of the Invention.
 - 1. Field of the Invention.
 - 2. Description of the Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) Brief Summary of the Invention.
- (g) Brief Description of the Several Views of the Drawing(s).
- (h) Detailed Description of the Invention.
- (i) Claim or Claims (commencing on a separate sheet).
- (j) Abstract of the Disclosure (commencing on a separate sheet).
- (k) Drawings.
- (l) Sequence Listing, if on paper (see 37 CFR 1.821-1.825).

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification. It should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.

Art Unit: 2178

- ©Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) Reference to a "Microfiche Appendix": See 37CFR 1.96© and MPEP § 608.05, if the application was filed before March 1, 2001. The total number of microfiche and the total number of frames should be specified. Reference to a "Sequence Listing," a table, or a computer program listing appendix submitted on compact disc and an incorporation by reference of the material on the compact disc.
- (e) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
- (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
 - (2) Description of the Related Art: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (h) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet (37 CFR 1.52(b)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be

Art Unit: 2178

separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(l)-(p).

- (j) Abstract of the Disclosure: A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims.
- (k) Drawings: See 37 CFR 1.81, 1.83-1.85, and MPEP § 608.02.
- (l) Sequence Listing, if on paper: See 37 CFR 1.821-1.825.

9. The disclosure is objected to because of the following informalities:

- the mathematical formulas on pages 14, 17, 18, 19, is difficult to decipher, because of the smudged ink.

Appropriate correction is required.

This is not an exhaustive list of any potential informalities, and Examiner requests that Applicant review the application carefully for other similar informalities.

Claim Rejections - 35 USC § 112

10. Claims 1-23 remain rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claims 1, 3, 4, 6, 9, 10, the use of "(1)" renders the claims indefinite, since it is not clear what it represents.

As per claim 1, line 6, "the position of this word" is indefinite, since it is unclear what "this word" is. In the last line, "that position" lacks a clear antecedent basis, since it can be either the "the position of this word in said reference" (line 6) or "the position of a global conceptualization".

In claim 3, line 4, it is unclear what is meant by "these positions are multiplexed", since it is unclear what constitutes the "multiplexing" in this limitation.

Claim 15 recites "Procedures for searching among a number of stored texts according to the storage procedure of claim 1 ..." With this language, it is unclear whether claim 15 is an independent claim or a dependent claim.

Claim 23 contains language "[sic]" which renders the claim indefinite, since it is unclear what effect the word has on the claimed limitations.

In claim 8, line 3, the limitation "which this word is likely to make reference are searched..." is vague and indefinite, since the language of degree of "likely" appears to be subjective.

In claims 10 and 23, the use of "the inflected word" and "the non-inflected word" lacks an antecedent basis.

Claims that are noted above as being rejected but not specifically cited below are rejected based on their dependency on rejected independent claims.

Claim Rejections - 35 USC § 101

11. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

12. Claims 1-23 remain rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

I. The claimed invention is so abstract and sweeping as to cover the method if practiced by a human operator assisted only by pencil and paper. The claims 1-23 do not include a particular machine or apparatus, and no machine-implemented steps are recited. Every step is capable of performance by the human mind. A method of this sort, traditionally called a "mental process", is not patentable subject matter.

"Phenomena of nature, though just discovered, *"mental processes"*, abstract intellectual concepts are not patentable as they are the basic tools of scientific and technological work." (Emphasis added). *Gottschalk v. Benson*, 175 U.S.P.Q. 673, 675 (U.S.S.C. 1972). See also, *In re Prater and Wei*, 159 U.S.P.Q. 583 (1968), *rehearing*, 162 U.S.P.Q. 571 (1969).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 1-11 and 15-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agrawal et al., U.S. Pat. No. 5,657,058..

As per claims 1-9, 11, 15-18, 21-22, Agrawal teaches the claimed use of a multidimensional conceptual reference for storing the conceptual text keywords for and using the vector sum to generate a resultant to locate the word during the search (col.2, line 21+, "vector ...[based]... approximate (or similarity) query"). Agrawal teaches that the use of a vector based query which calculates the distance between the candidate words for retrieving the optimal answer (col.4, line 31, "Euclidean distance range

search..."). Furthermore, Agrawal teaches the use of the multidimensional orthonormal conceptual references that are used for the keywords ("N-dimensional data vectors" see Abstract). Also, Agrawal teaches that the calculation of the distance between two positions in the conceptual reference utilizes the scalar product of these positions (col.6, lines 55-59"

Although Agrawal does not describe the invention in terms of the "global conceptualization". Agrawal teaches that the invention is used for "high dimensional indexing which guarantees completeness." Therefore, given the prior art of Agrawal, a person of ordinary skill would have applied invention for the claimed keyword searching using the global conceptual references.

As per dependent claims 10 and 23, Agrawal does not explicitly disclose transforming the non-inflected words into inflected form and vice versa. Nevertheless, in the dictionary art at the time of the invention, it was extremely well known practice to transform the non-inflected words into inflected form and vice versa, for the storage and for the searches to allow variations of a given word to be correctly queried. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have used the well known technique, since Agrawal taught a retrieval system for that searches based on many keywords (col.9, lines 5-15).

As per dependent claims 18-20, Agrawal does not explicitly disclose using the claimed mathematical formulas in the non-Euclidean space. Nevertheless, the claimed formulas represent calculating the vector sum's by using the scalar products. Agrawal also teaches the use of the vector algebra using the dot products (col.6, lines 30-60) Thus, It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have envisaged using the claimed formulas from the Agrawal's vector algebra calculations for finding the resultant vector for the answer.

Response to Arguments

Applicant's arguments filed 8/21/03 have been fully considered but they are not persuasive.

With respect to the Applicant's argument regarding the rejection of claims 1-23 under 35 USC 112, second paragraph, Applicant simply says the rejection is traversed. Thus, the argument is not persuasive and the rejections remain.


With respect to the rejection of claims 1-23 under 35 USC 101 as being non-statutory subject matter, Applicant argues, for example, "In Alappat, it was held that data, transformed by a machine through a series of mathematical calculations to produce a smooth wave form display on a rasterizer monitor, constitute a practical application of an abstract idea..., because it produced 'a useful, concrete and tangible result'." Examiner agrees with the Applicant's analysis of the Alappat. However, the currently pending claims do not require "a machine" through which these mental steps can be carried out. In other words, the claimed limitations can be performed by someone using a pen and pencil. Therefore, as Applicant points out in the argument above, embodying the claimed steps to be performed on a machine (or computer, e.g.) would overcome the rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen S. Hong whose telephone number is (703) 308-5465. The examiner can normally be reached on Monday to Friday, 9:00am to 6:00pm.

Art Unit: 2178

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Herndon can be reached on (703) 308-5186. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


Stephen Hong
Primary Examiner
Art Unit 2178
November 14, 2003